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EXAMINER	
MEW, KEVIN D	
ART UNIT	PAPER NUMBER
2616	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patent-ch@btlaw.com

Office Action Summary	Application No.	Applicant(s)	
	09/680,829	O'CONNELL ET AL.	
	Examiner	Art Unit	
	KEVIN MEW	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-47 and 50-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *54* is/are allowed.

6)☒ Claim(s) *1-11,27-31,33-35, 44-47, 50-53* is/are rejected.

7)☒ Claim(s) *12-26, 32, 36-43* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

Response to Amendment

1. Applicant's Arguments/Remarks filed 12/26/2007 have been fully considered. Claims 48-49 have been cancelled by applicant, and claims 1-47 and 50-54 are currently pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2, 4, 7-9, 27-31, 33-35, 44-47, 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beyda et al. (USP 6,590,869) in view of Weaver et al. (USP 7,151,927).

Regarding claims 1 & 34, Beyda discloses a computer software and hardware product to perform a method of monitoring quality of service (monitoring and calculating transmission delay, col. 3, lines 60-63) in communications over a packet-based network between two points (in communications over a packet-based network/Internet between local IP-telephony terminal 18 and remote terminal 36, see col. 3, lines 60-67and Fig. 1), at least one of which is an endpoint (IP-telephony terminal is an end-point, col. 3, lines 53-54, element 18, Fig. 1), wherein said endpoint is a telephony device enabling a user to participate in a telephony session over the

network (IP-telephony terminal is the endpoint enabling a user to participate in a on-going call with the remote terminal 36 over the Internet network, col. 6, lines 8-17 and Fig. 1);
the method comprising the steps of:

transmitting test packets across the network (transmitting test packet to the remote call processor, see col. 6, lines 8-17) while a telephony session including said telephony device is in progress (while on-going call including the local IP-telephony terminal 18 is in progress, col. 6, lines 8-17, col. 3, lines 57-62) and monitoring transmission characteristics of said test packets (monitoring round trip transmission delay of the test packet of the test packet transmitted by the delay calculation means 12, see col. 6, lines 8-17);

dynamically calculating from said transmission characteristics a measure of network performance (dynamically calculating an end-to-end echo based on the round trip transmission delay, see lines 8-17, col. 6); and

Beyda may not explicitly show providing at said telephony device a dynamic indication of the network performance based on said calculation during said telephony session.

However, Weaver teaches a method of simultaneously transmission of calls and analysis of quality of the calls to determine the quality of service for the call and to allow the call originator to access the call data analysis (col. 1, lines 48-51, 56-59, col. 2, lines 44-49, col. 18-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the quality of service measuring method and system of Beyda with the teaching of Weaver in disclosing simultaneously transmission of calls and analysis of quality of the calls to determine the quality of service for the call and to allow the call originator

to access the call data analysis such that the end-point telephony device of Beyda will be modified to show a dynamic indication of the measured network performance data at the end-point IP-telephony terminal 18.

The motivation to do so is to enable analyzing call data in real-time to determine quality of service for the call.

Regarding claims 2 & 35, Beyda discloses a computer software and hardware product to perform the method according to claims 1 and 34, respectively, wherein said transmission characteristics are selected from packet loss, transmission delay, and a combination thereof (round trip transmission delay, see col. 6, lines 8-17).

Regarding claim 4, Beyda and Weaver discloses a method according to claim 1. Beyda may not explicitly show the indication of the network performance is provided by means of a visual display associated with the endpoint.

However, Weaver teaches a method of simultaneously transmission of calls and analysis of quality of the calls to determine the quality of service for the call and to allow the call originator to access the call data analysis (col. 1, lines 48-51, 56-59, col. 2, lines 44-49, col. 18-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the quality of service measuring method and system of Beyda with the teaching of Weaver in disclosing simultaneously transmission of calls and analysis of quality of the calls to determine the quality of service for the call and to allow the call originator

to access the call data analysis such that the end-point telephony device of Beyda will be modified to show a visual display of the measured network performance data at the end-point IP-telephony terminal 18.

The motivation to do so is to enable analyzing call data in real-time to determine quality of service for the call.

Regarding claim 7, Beyda discloses a method according to claim 1, wherein said test packets include a first series of test packets which issue from a source location to a destination location and transmitting a second series of test packets which issue from said destination location to said source location in response to said first series of test packets, whereby said network characteristics may be monitored by comparing the first and second series of test packets (col. 6, lines 8-17).

Regarding claim 8, Beyda and Weaver disclose a method according to claim 7. Beyda and Weaver may not explicitly show the first series of test packets include local source timestamp information and wherein the second series of test packets include local destination timestamp information, the difference between said local source timestamp information and local destination timestamp information being used to calculate a delay characteristic of the network.

However, Schuster discloses a timestamp may be used to accurately record the time of transmission and receipt if a packet transmission count is taken at the source and a packet count is taken at the source if the traffic is returned from an echo port (see lines 29-37, col. 11).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the quality of service measuring method and system of Beyda and Weaver with the teaching of Schuster in a timestamp may be used to accurately record the time of transmission and receipt if a packet transmission count is taken at the source and a packet count is taken at the source if the traffic is returned from an echo port such that the system of Beyda will show the first series of test packets include local source timestamp information and wherein the second series of test packets include local destination timestamp information, the difference between said local source timestamp information and local destination timestamp information being used to calculate a delay characteristic of the network.

The motivation to do so is to include timestamps at transmission and reception so that time-based measurements can be made to determine service level agreement conformance.

Regarding claim 9, Beyda discloses a method according to claim 8, wherein the delay characteristic is the absolute delay in echo-free connections (Ta) between the source and destination locations over the network (the round trip delay calculation may include a delay introduced by a remote call processor, col. 2, lines 62-64).

Regarding claims 27 & 44, Beyda and Weaver disclose all the aspects of claims 1 and 34 above. Beyda discloses the step of providing a dynamic indication of the network performance includes providing, at the request of a user, an indication of one or more of said transmission characteristics.

Weaver teaches a method of simultaneously transmission of calls and analysis of quality of the calls to determine the quality of service for the call and to allow the call originator to request to access the call data analysis (col. 1, lines 48-51, 56-59, col. 2, lines 44-49, col. 18-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the quality of service measuring method and system of Beyda with the teaching of Weaver in disclosing simultaneously transmission of calls and analysis of quality of the calls to determine the quality of service for the call and to allow the call originator to access the call data analysis such that the end-point telephony device of Beyda will be modified to show a dynamic indication of the measured network performance data at the end-point IP-telephony terminal 18.

The motivation to do so is to enable analyzing call data in real-time to determine quality of service for the call.

Regarding claim 28, Beyda and Weaver disclose a method according to claim 27. Beyda may not disclose the request of the user is made by means of an input device associated with the endpoint and the indication is provided by means of a display device associated with the endpoint.

However, Weaver teaches a method of simultaneously transmission of calls and analysis of quality of the calls to determine the quality of service for the call and to allow the call originator to access the call data analysis (col. 1, lines 48-51, 56-59, col. 2, lines 44-49, col. 18-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the quality of service measuring method and system of Beyda with the teaching of Weaver in disclosing simultaneously transmission of calls and analysis of quality of the calls to determine the quality of service for the call and to allow the call originator to access the call data analysis such that the end-point telephony device of Beyda will be modified to show a visual display of the measured network performance data at the end-point IP-telephony terminal 18.

The motivation to do so is to enable analyzing call data in real-time to determine quality of service for the call.

Regarding claims 29 & 45, Beyda discloses a computer software with instructions to execute a method according to claims 1 and 34, respectively, further comprising the step of logging the network transmission characteristics (collecting round trip transmission characteristics, col. 4, lines 27-32).

Regarding claims 30 & 46, Beyda discloses a computer software with instructions to execute the method according to claims 1 & 34, respectively, further comprising the step of logging the results of said calculation (collecting an end-to-end echo, col. 6, lines 8-17).

Regarding claim 31, Beyda discloses a method according to claim 30, wherein the step of logging the results of said calculation occurs only when said results are within a predetermined range (collecting an end-to-end echo if the calculated round trip delay is within the critical range, col. 6, lines 8-17).

Regarding claims 33 & 47, Beyda and Weaver disclose a method according to claims 1 & 34, respectively, except fail to disclose further comprising the step of adjusting a billing record for a user in dependence on the results of said calculation.

However, Schuster discloses adjusting a billing record for a user in dependence on the results of transmission characteristics calculation (col. 12, lines 27-41, col. 11, lines 38-44).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the quality of service measuring method and system of Beyda with the teaching of Schuster in adjusting a billing record for a user in dependence on the results of said calculation such that the quality of service monitoring method of Beyda will also adjust a billing record for a user in dependence on the results of said calculation.

The motivation to do so is to allow the billing to be reduced as a result of the noncompliance of the services specified in the service level agreement.

Regarding claim 50, Beyda discloses a system for monitoring quality of service in communications over a packet-based network (an apparatus for monitoring and calculating transmission delay, col. 3, lines 60-63 and Fig. 1), comprising:

a source endpoint connected to the network via which a user may transmit communication signals over the network (IP-telephony terminal 18 is a source end-point, col. 3, lines 53-54, element 18, Fig. 1) wherein said endpoint is a telephony device enabling a user to participate in a telecommunication session over the network (IP-telephony terminal 18 is the endpoint enabling a user to participate in a on-going call with the remote terminal 36 over the Internet network, col. 6, lines 8-17 and Fig. 1);

a test packet generator for transmitting test packets across the network (transmitting test packet to the remote call processor, see col. 6, lines 8-17) during said telephony session (while on-going call including the local IP-telephony terminal 18 is in progress, col. 6, lines 8-17, col. 3, lines 57-62);

a test packet receiver for receiving test packets from the network (remote terminal 36 is receiving test packets from the network, col. 6, lines 8-17 and Fig. 1);

a processor for measuring transmission characteristics of said test packets (delay calculation means 12, Fig. 1) and for calculating from said transmission characteristics a measure of network performance (dynamically calculating an end-to-end echo based on the round trip transmission delay, see lines 8-17, col. 6); and

Beyda may not explicitly show providing an output associated with said telephony device for providing a dynamic indication of the network performance based on said calculation during said telephony session.

However, Weaver teaches a method of simultaneously transmission of calls and analysis of quality of the calls to determine the quality of service for the call and to allow the call originator to access the call data analysis (col. 1, lines 48-51, 56-59, col. 2, lines 44-49, col. 18-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the quality of service measuring method and system of Beyda with the teaching of Weaver in disclosing simultaneously transmission of calls and analysis of quality of the calls to determine the quality of service for the call and to allow the call originator to access the call data analysis such that the end-point telephony device of Beyda will be

modified to show a dynamic indication of the measured network performance data at the end-point IP-telephony terminal 18.

The motivation to do so is to enable analyzing call data in real-time to determine quality of service for the call.

3. Claims 3, 10-11, 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beyda et al. (USP 6,590,869) in view of Weaver et al. (USP 7,151,927), and in further view of Schuster et al. (USP 6,363,053).

Regarding claim 3, Beyda and Weaver disclose all the aspects of claim 2 above, including said transmission characteristics include transmission delay. Beyda and Weaver does not show a method according to claim 2, wherein said transmission characteristics include packet loss.

However, Schuster discloses the transmission characteristics in a quality of service monitoring include packet loss (col. 11, lines 65-67, col. 12, lines 1-7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the quality of service measuring method and system of Beyda and Weaver with the teaching of Schuster in having transmission characteristics that include transmission delay such that said transmission characteristics include both packet loss as well.

The motivation to do so is to include packet loss as a measurable attribute to determine if the service level agreement is conformed.

Regarding claims 10 & 11, Beyda and Weaver disclose a method according to claims 7 and 9, except fail to disclose measure of packet loss is obtained by comparing the packets issued from the source location and the packets received back at the source location.

However, Schuster discloses packet loss can be measured by the number of packets received to the number of packets originally transmitted (see lines 18-20, col. 12 and 62-65, col. 13).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the quality of service measuring method and system of Beyda and Weaver with the teaching of Schuster in measuring packet loss by the number of packets received to the number of packets originally transmitted such that measure of packet loss is obtained by comparing the packets issued from the source location and the packets received back at the source location.

The motivation to do so is to include packet loss as a measurable attribute to determine if the service level agreement is conformed.

Regarding claim 51, Beyda and Weaver disclose a system according to claim 50, except fail to disclose said test packet generator includes a timestamp generator for adding a local source timestamp to said test packets.

However, Schuster discloses including timestamps at transmission and reception when determining transmission delay between a source and a destination (see lines 17-44, col. 11).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the quality of service measuring method and system of Beyda

with the teaching of Schuster in including timestamps at transmission and reception when determining transmission delay between a source and a destination such that the test packet generator of Beyda will include a timestamp generator for adding a local source timestamp to said test packets.

The motivation to do so is to analyze time-based characteristic such as transmission delay in order to determine if the quality of service conforms with the service level agreement.

Regarding claim 52, Beyda and Weaver disclose a system according to claim 51, further comprising a destination endpoint with which said source endpoint is in communication over the network, said destination endpoint having associated therewith: a test packet receiver for receiving test packets from the network (col. 6, lines 8-17, col. 3, lines 57-62).

Beyda does not explicitly show a timestamp generator for adding a local destination timestamp to said received test packets; and a test packet re-transmitter for re-transmitting said received test packets with said local destination timestamp back to their source.

However, Schuster discloses including timestamps at transmission and reception when determining transmission delay between a source and a destination (see lines 17-44, col. 11).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the quality of service measuring method and system of Beyda and Weaver with the teaching of Schuster in including timestamps at transmission and reception when determining transmission delay between a source and a destination such that the test packet generator of Beyda will show adding a local destination timestamp to said received test packets;

and a test packet re-transmitter for re-transmitting said received test packets with said local destination timestamp back to their source.

The motivation to do so is to analyze time-based characteristic such as transmission delay in order to determine if the quality of service conforms with the service level agreement.

Regarding claim 53, Beyda and Weaver disclose a system according to claim 52, except fail to disclose further comprising a centralized time server in communication with the network for generating a standardized time and providing same to said source and destination endpoints.

However, Schuster discloses providing a standardized time by a common time source (GPS clock) to both the source and the destination (see lines 17-44, col. 11).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the quality of service measuring method and system of Beyda and Weaver with the teaching of Schuster in providing a standardized time by a GPS clock to both the source and the destination such that the combined system of Beyda and Weaver will comprise a centralized time server in communication with the network for generating a standardized time and providing same to said source and destination endpoints.

Then motivation to do so is to synchronize the clock between the source and the destination.

4. Claim 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beyda in view of Weaver, and in further view of Vaid et al. (USP 6,520,131).

Regarding claims 5 & 6, Beyda and Weaver disclose all the aspects of the claimed invention set forth in the rejection of claims, except fails to disclose the indication of the network performance is provided by means of an audio signal and a discrete signal emitted at the source endpoint when the value of the transmission characteristic passes a predetermined value.

However, Vaid discloses a method and apparatus for monitoring QoS in which alarms will be triggered when a QoS characteristic threshold is reached (see lines 23-55, col. 27 and Fig. 19).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to combine the QoS monitoring apparatus of Beyda with the alarm portion of the GUI interface of QoS management tool of Vaid such that an aural signal will be generated to alert a transmission threshold is reached such as the QoS management tool taught by Vaid.

The motivation to do so is to provide an audible signal to signify that the threshold of a certain transmission characteristic has been reached because it will provide an instant alert to bring attention to the network administrator on what transmission characteristic creates a bottleneck on the network performance.

Allowable Subject Matter

5. Claim 54 is allowed.

6. Claims 12-26, 32, 36-43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

In claim 12, a method according to claim 11, wherein the measure of packet loss and the identity of the communications codec being employed by the endpoint are used to calculate an equipment impairment factor (Ie).

In claim 32, a method according to claim 30, wherein the step of logging also includes logging the fact that a communications connection over the network has been lost.

In claim 36, a computer software and hardware product according to claim 35, wherein the transmission characteristics include the absolute delay in echo-free connections (Ta) between source and destination locations over the network, obtained by comparing local timestamp information from source and destination locations on the network and a measure of packet loss obtained by comparing the packets issued from the source location and the packets received back at the source location.

In claim 38, a method according to claim 14, wherein the delay impairment factor (Idd) is given by the formulae:

(i) for Ta < 100ms,

Idd = 0; and

(ii) for Ta => 100 ms,

$Idd = 25* ((1+X^6)^{1/6} - 3* (1+ (X/3)^6)^{1/6} + 2)$

Where X = (log(Ta/100))/log(2)

In claim 54, a method of monitoring quality of service in communications over a packet-based network between two points, at least one of which is an endpoint, comprising the steps of:

calculating from said measured difference the absolute delay in echo-free connections (Ta) between the source and destination locations over the network and thereby calculating a delay impairment factor.

Response to Arguments

7. Applicant's arguments filed 12/26/2007 have been fully considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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